REMARKS

Claims 1-30 are currently pending in the subject application, and are presently under consideration. Claims 1-3, 12, 15-17, 24, 27 and 30 are rejected. Claims 4-11, 13, 14, 18-23, 25, 26, 28 and 29 have been indicated as allowable. Claims 8, 13, 21, 24 have been amended to correct minor grammatical errors. The amendments to the claims are not meant to limit the claims in any manner. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1-3, 15-17, 24, 27 and 30 Under 35 U.S.C. §102

Claims 1-3, 15-17, 24, 27 and 30 stand rejected under 35 U.S.C. §102 as being anticipated by Shaw, U.S. Patent No. 6,107,880 ("Shaw"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Shaw discloses a power amplifier circuit that adjusts the supply voltage level of a linear amplifier based on measured input power levels to and to increase the linearity of the phase and gain of the amplifier circuit and provide a constant output gain and phase. The purpose of Shaw is to compensate for the inherent non-linearities in linear amplifiers that cause linear distortion. Shaw operates similarly to the well known envelope tracker in which a supply voltage tracks an input signal to maintain a headroom to assure that a linear amplifier operates in the linear region and stays out of the saturation region.

Claim 1 recites an amplifier system that includes a power amplifier and a mode selector that controls the operation of the power amplifier between a polar mode and a signal restoration mode based on a characteristic of the input signal relative to a threshold level.

Shaw does not disclose switching between a polar mode and a signal restoration mode. An amplifier that is operating in a polar mode is employing an envelope elimination and restoration (EER) technique in which the input signal is separated in to

its polar components with a phase modulated component with a constant envelope being provided to an input of the amplifier, and an amplitude modulated component being provided to a supply of the amplifier, such that the supply signal is an information bearing signal. Therefore, Shaw does not disclose a polar mode nor does Shaw disclose switching between a polar mode and a signal restoration mode.

Additionally, Shaw does not disclose a signal restoration mode. Polar amplifiers can cut-off and/or require an extremely rapid and difficult phase change in the constant envelope phase modulated path when the supply voltage is reduced below a critical level, as could happen when the signal crosses through a zero-amplitude point (*e.g.,* zero crossings) (see paragraph 0018). Therefore, claim 1 provides for a signal restoration mode. The Examiner refers to the saturation mode as being a signal restoration mode. However, Shaw never discloses that the signal is restored or that the amplifier enters the saturation mode, such that it may need to be restored. In fact in Shaw, the supply level can simply be adjusted higher so that the amplifier does not enter the saturation mode. This is most likely the case since Shaw disclosing adjusting the supply voltage level of a linear amplifier based on measured input power levels to provide a constant output gain and phase. Therefore, Shaw does not disclose switching between a polar mode and a signal restoration mode based on a characteristic of an input signal, as recited in claim 1. Therefore, Shaw does not anticipate claim 1 and claims 2-3, 12, and 15-16, which depend therefrom.

Claim 2 depends on claim 1, and further recites a correction path that provides at least a substantial portion of the amplified output signal in the signal restoration mode. Shaw discloses an input path and a supply path, but does not disclose a correction path. Therefore, Shaw does not disclose a correction path that provides at least a substantial portion of the amplified output signal in the signal restoration mode, as stated in claim 2. The Examiner references that the output of 16 to input of 18 is a correction path. However, Shaw teaches that the output of 16 to the input of 18 is the supply voltage level of the amplifier (Col. 2, ll. 41-43). Therefore, the correction path

recited by the Examiner is the supply path and could not be employed to provide at least a substantial portion of the amplified output signal in the signal restoration mode, as recited in claim 2. Therefore, Shaw does not anticipate claim 2.

Claim 3 depends on claim 2, and further recites the correction path mitigates signal distortion and out-of-band (OOB) emissions associated with the amplified output signal in the polar mode. As previously stated, Shaw does not disclose a correction path or a polar mode. Therefore, Shaw would not disclose a correction path that mitigates signal distortion and out-of-band (OOB) emissions associated with the amplified output signal in the polar mode, as recited in claim 3. Therefore, Shaw does not anticipate claim 3.

Claim 17 recites an amplifier system comprising a power amplifier, an input path , a supply path, a mode selector that controls the operation of the amplifier system between a polar mode and a signal restoration mode based on an envelope amplitude level of the input signal relative to a threshold level, and a correction path that mitigates signal distortion and out-of-band (OOB) emissions associated with the amplified output signal in the polar mode and provides at least a substantial portion of the amplified output signal in the signal restoration mode.

Shaw does not disclose a correction path. The path that the Examiner is reciting as a correction path (the output of 16 to the input of 18) of Shaw is the supply path (Col. 2, ll. 41-43) to the amplifier. Since Shaw has only two paths, Shaw cannot disclose an input path, a supply path and a correction path. Therefore, Shaw does not teach each and every element of claim 17. Additionally, Shaw does not disclose a mode selector that controls the operation of the amplifier system between a polar mode and a signal restoration mode, since Shaw never operates in a polar mode nor does Shaw operate in a signal restoration mode. Shaw simply adjusts the supply voltage of the amplifier in response to the power level of the input signal to maintain a constant gain and phase. Furthermore, Shaw does not disclose a correction path that both mitigates signal distortion and out-of-band (OOB) emissions associated with the amplified output signal

in the polar mode and provides at least a substantial portion of the amplified output signal in the signal restoration mode. Therefore, Shaw does not anticipate claim 17.

Claim 24 recites an amplifier system comprising means for amplifying an input signal, means for switching operation of the amplifier system between a polar mode and a restoration mode based on a characteristic of the input signal relative to a threshold level, and means for correcting the amplified output signal, the means for correcting mitigating distortion and out-of-band (OOB) emissions in the polar mode and providing at least a substantial portion of the amplified output signal in the signal restoration mode.

As previously stated, Shaw does not disclose operation in a polar mode or a restoration mode, and therefore, does not disclose means for switching operation of the amplifier system between a polar mode and a restoration mode based on a characteristic of the input signal relative to a threshold level. Furthermore, Shaw does not disclose means for correcting the amplified output signal, such that the means for correcting both mitigates distortion and out-of-band (OOB) emissions in the polar mode and provides at least a substantial portion of the amplified output signal in the signal restoration mode. Therefore, Shaw does not anticipate claim 24.

Claim 27 recites a method of amplifying an input signal with a power amplifier. The method comprises switching a power amplifier between a polar mode operation and a signal restoration mode operation based on a characteristic of an input signal relative to a threshold level, transmitting a phase modulated component of the input signal to an input terminal of a power amplifier and an amplitude modulated component of the input signal to a supply terminal of the power amplifier during polar mode operation, and transmitting one of a composite signal component, a phase modulated component, a substantially constant amplitude signal and no signal to the input terminal of the power amplifier and a substantially constant amplitude signal to the supply terminal during the signal restoration mode operation, amplifying the input signal *via* the power amplifier while continuously switching modes between polar mode operation and

signal mode operation to provide an amplified output signal, and performing a signal correction on the amplified output signal.

Shaw does not disclose operating or switching between a polar mode or a signal restoration mode. Therefore, Shaw does not disclose transmitting a phase modulated component of the input signal to an input terminal of a power amplifier and an amplitude modulated component of the input signal to a supply terminal of the power amplifier during polar mode operation, and transmitting one of a composite signal component, a phase modulated component, a substantially constant amplitude signal and no signal to the input terminal of the power amplifier and a substantially constant amplitude signal to the supply terminal during the signal restoration mode operation, as recited in claim 27. Furthermore, similar elements were indicated as allowable in claims 5 and 18. Therefore, claim 27 should be allowable. Additionally, Shaw does not disclose performing a signal correction on the amplified output signal. Shaw simply discloses adjusting the switching supply level in response to measured power levels of the input signal. For these reasons, Shaw does not anticipate claim 27 and claim 30 which depends therefrom.

Claim 30 depends from claim 27, and further recites the signal correction mitigating distortion and out-of-band (OOB) emissions in the polar mode and providing at least a substantial portion of the amplified output signal in the signal restoration mode. As previously stated, Shaw does not disclose providing signal correction that both mitigates distortion and out-of-band (OOB) emissions in the polar mode and providing at least a substantial portion of the amplified output signal in the signal restoration mode. Therefore, Shaw does not disclose claim 30.

For the reasons described above, claims 1-3, 15-17, 24, 27 and 30 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claim 12 Under 35 U.S.C. §103(a)

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Shaw (Figs. 1 and 2). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 12 depends on claim 1, and further recites that the power amplifier is a non-linear class type amplifier. The Examiner states that it would have been obvious to one skilled in the art to have implemented the specific class type of the amplifier, since they are based on the routine experimentation to obtain the optimum operating parameters. The Applicant's representative respectfully disagrees. The purpose of Shaw is to compensate for the inherent non-linearities in linear amplifiers that cause linear distortion. The Examiner's proposed modification of Shaw would render Shaw unsatisfactory for its intended purpose (*i.e.,* to compensate for the inherent non-linearities in linear amplifiers). Therefore, there would be no suggestion or motivation to make the proposed modification. For these reasons, claim 12 is not obvious in view of Shaw.

For the reasons described above, claim 12 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

Date 8/16/05

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